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ABSTRACT

To determine which variables best predict academic achievement, a study explored relationships among teacher perception of student communication apprehension (CA), intelligence, academic achievement, and self-reported CA in 203 public elementary school students, ages 8 to 12 years in grades 3-6. The Personal Report of Communication Fear (a 14-item self-report inventory) was used to measure levels of CA. Davey's Communication Apprehension Behavior Inventory was used to record teacher perception of CA among subjects. Academic achievement measures consisted of the total battery scaled score on the Comprehensive Tests of Basic Skills, and intelligence data (IQ) were derived from the Test of Cognitive Skills, which was administered in conjunction with the achievement battery. Results indicated that the best predictor of CA included only two variables--intelligence and teacher perception of CA--with the latter sharing little variance with achievement. A predictor model based on both intelligence and teacher perception of CA was found to be only slightly better than one based on intelligence alone. Intelligence correlated significantly with achievement, and CA correlated with teacher perception of CA. Teacher perception of CA correlated negatively with achievement and IQ. CA was not found to correlate significantly with either achievement or intelligence. (Two tables of data are included, and 35 references are attached.) (MM)

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Communication Apprehension, Teacher Perception, Intelligence, and Academic Achievement: A Correlational Study

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Abstract

To explore relationships among self-perceived communication apprehension (CA) in elementary students, teacher perception of student CA, intelligence, and levels of academic achievement, these research questions were posed: Which set of variables best predicts academic achievement? What is the relationship between each set of variables that helps interpret the prediction equation? Data were gathered regarding 203 elementary school subjects ranging in age from 8 to 12 years. The best predictor model for academic achievement included only two of the variables under study, intelligence and teacher perception of CA, with the latter showing little variance with achievement. A predictor model based on both intelligence and teacher perception of CA was found to be only slightly better than one based on intelligence alone. Intelligence was found to correlate at a significant level with achievement, and CA with teacher perception of CA; teacher perception of CA was found to correlate negatively with achievement and IQ. CA was not found to correlate at a significant level with either achievement or intelligence.

Communication Apprehension, Teacher Perception, Intelligence, and Academic Achievement: A Correlational Study

Educators are concerned about the factors that facilitate learning and likewise about specifying and preventing barriers to student achievement. Among the foremost factors commonly associated with general academic achievement of elementary school students are intelligence (e.g., Binder, Jones, & Strowig, 1970; Thorndike & Hagan, 1969) and teacher perception of student learning (e.g., Good, 1987). Researchers in speech communication have explored possible relationships between communication apprehension (CA) and general academic achievement and have identified communication apprehension as a serious deterrent to learning among elementary school students (e.g., Comadena, 1985; Elliott, 1968; McCroskey, 1977a). Although the effects of both CA and teacher perception of student learning on student achievement have been examined (Garrison & Garrison, 1979a; McCroskey, Andersen, Richmond, & Wheeless, 1981), the combined effect of these factors on actual achievement scores has been virtually unexplored. Further, possible relationships of teacher perception of student communication apprehension and academic achievement have received little attention (McCroskey & Daly, 1976). This research explores relationships among self-reported CA in elementary students, teacher perception of student CA, intelligence, and academic achievement.

Communication Apprehension

Listed as America's number one fear (Wallechinsky, Wallace, & Wallace, 1978), communication apprehension also labeled shyness, reticence, and speech anxiety, is found to affect 20 per cent of college populations. This condition also has been found to affect students at the elementary, junior, and senior high school levels and senior citizens (McCroskey, 1977b). Research shows the following to be generally true of the person who experiences CA: (a) the person will withdraw and avoid communication; (b) negative perceptions of the CA person will occur by others in the environment; (c) as a result of the combination of withdrawal and negative perception by others, the CA person's academic, social, economic, and political life will be negatively impacted (McCroskey, 1977b).

The arenas of both the home and school are found to provide environments for the development of CA (Daly & Friedrich, 1981; McCroskey, 1984). In the home environment, reinforcement, modeling, and skills acquisition are factors thought to be related to the development of CA (Daly & Friedrich, 1981). Various studies have explored communication apprehension in elementary grades, have found significant amounts of CA and a tendency for CA to increase as grade level progresses (e.g., Garrison & Garrison, 1979b); McCroskey, Andersen, Richmond, & Wheeless, 1981; Shaw, 1966), and have compared amounts of CA in American and foreign children (Watson, Monroe, & Atterstrom, 1985). McCroskey and Daly (1976) reported high CA children to be perceived more negatively by teachers and to achieve less in the

academic setting than children with moderate or low CA.

Communication Apprehension and Intelligence

Although many studies support the positive relationship of intelligence to academic learning (e.g., Binder, Jones, & Strowig, 1970; Thorndike & Hagan, 1969), few studies have explored the relationship between intelligence and CA. Two studies (Bashore, 1971; McCroskey, Daly, & Sorensen, 1976) suggest that there may be little relationship between the two variables; however, Davis and Scott (1978) found intelligence to be far more associated with achievement and CA than with CA and verbal activity.

Communication Apprehension and Academic Achievement

Studies investigating the relationship between CA and academic scores on the college, secondary, middle, and elementary school levels have yielded conflicting results. In the college setting, McCroskey and Andersen (1976) and Watson (1982) found negative relationships of CA and scores on the American College Test, and Scott and Wheeless (1977) found CA to have a deleterious effect on achievement in mass lecture sections of a university level communication course. In contrast, however, Garrison, Seiler, and Boohar (1977) found that CA did not have a detrimental effect on academic achievement in either lecture or laboratory learning environments for university science, nonscience, and premedical subjects. In a study of secondary school subjects, Davis and Scott (1978) found high and moderate CAs to achieve at comparable levels.

In a study of junior high school students, Hurt, Preiss, and Davis (1976) found CA to be correlated significantly with

affective learning, or attitudes toward school, and cognitive learning, or grades. The study indicated that as the level of CA increased, student attitudes toward school became negative and grades lower.

While studies of relationships between achievement of elementary school students and CA are less prevalent than similar studies with older students, two studies add data for consideration. Comadena (1985) found significant negative effects of CA on student achievement when examining subjects in grades one through eight. Elliott (1968) compared shy with non-shy children in grades four through six. In reading, arithmetic, and listening, the experimental group of shy, uncommunicative children scored significantly lower than did the more verbal controls.

Teacher Perception and Student Achievement

The effects of teacher perception on student learning have been explored in various academic settings. Rosenthal and Jacobson (1968) studied teachers, students, and the self-fulfilling prophecy or the tendency to act out previously predicted success or failure. They found that in the early grades teachers' artifically high expectations for student performance were associated with enhanced student performance. A replication of the study (Claiborn, 1969) however, failed to produce the same results. Continued research in this area leads to a consensus that teachers' expectations do affect teacher-student interaction and student outcomes, along with the recognition that the processes involved are much more complex than originally believed

(Brophy, 1983; Cooper & Good, 1983; Dusek, 1985; Marshall & Weinstein, 1984). Effects of teacher perception upon academic achievement have been explored in other studies (e.g., Beez, 1968; Dusek, 1985) and from these studies a strong relationship is generally assumed.

Research has indicated that children may develop CA and that the person who experiences CA is perceived negatively both by self and others. Elliott (1968) found teachers to be aware of shyness in children and to be able to choose shy children from among other students. A study examining the relationship between teacher perception of CA and student perceptions of CA indicated a moderate positive relationship between teachers' rankings and students' self-report of apprehension scores (Garrison & Garrison, 1979a). Davey (1975) explored relationships between CA and teacher perception with the development of the Communication Apprehension Behavior Inventory. This instrument inventories teacher perceptions of student patterns of verbal and nonverbal communication which characterize communication apprehension.

Using descriptions of hypothetical students, McCroskey and Daly (1976) compared teacher expectations of the effects of high and low apprehension on elementary students' academic achievement. Results suggested positive teacher expectations for the low apprehensive child and negative expectations for the high apprehensive child. These studies indicate the awareness of CA by teachers and the effect CA may have on teacher perception. If teachers can perceive student CA, then manifestations of CA by students may influence perceptions teachers form of these students.

To explore relationships among self-reported CA in elementary students, teacher perception of student CA, intelligence, and levels of academic achievement, the following research questions were posed:

1. Which set of variables best predicts academic achievement?

2. What is the relationship between each set of variables that helps interpret the prediction equation?

Method

Sample

Data regarding level of communication apprehension, teacher perception of communication apprehensive behaviors, intelligence, and academic achievement were gathered from 203 subjects, ages 8 to 12 years in grades 3-6, attending a public elementary school.

Assessment of Communication Apprehension

The Personal Report of Communication Fear (PRCF), a 14-item self-report inventory (McCroskey et al., 1981) was used to measure levels of communication apprehension. Respondents were instructed to record the degree to which each item applies by indicating 'YES' -- strongly agree; 'yes' -- agree; '?' -- unsure; 'no' -- disagree; or 'NO' -- strongly disagree.

For third grade subjects, the classroom teacher administered the PRCF in groups of four to seven students. After reading the directions and discussing possible responses with the small group, the teacher administered the PRCF individually by reading each item and recording each student's response. For subjects in grades four through six, the classroom teacher distributed the

inventories to the entire class and discussed the directions. Then the teacher read the items to the class and paused after each item for subjects to circle their response.

In the development of the PRCF, reliabilities of .70 for grades K-3 and .79 for grades 4-6 were obtained (McCroskey et al., 1981). Data from the current sample yielded an alpha coefficient of .81 for the PRCF. Administration of the MECA, a similar inventory for children concurrently with the PRCF provided validity coefficients (Garrison & Garrison, 1979b).

Assessment of Teacher Perception of Communication Apprehension

Davey's (1975) Communication Apprehension Behavior Inventory (CABI) was used to record teacher perception of communication apprehension among subjects. To use the CABI, teachers were asked to evaluate students, using 'yes-no' responses, regarding 10 observable target behaviors. Scoring is accomplished by summing the number of behaviors observed. Each student in the sample was evaluated on the CABI by his or her homeroom teacher. An alpha coefficient of .86 was obtained for the sample.

Assessment of Intelligence and Achievement

The measure of academic achievement used in the study was the total battery scaled score on the Comprehensive Tests of Basic Skills (CTBS) (CTB/McGraw-Hill, 1981a). Intelligence (IQ) data for all subjects were derived from the Test of Cognitive Skills (CTB/McGraw-Hill, 1981b), which was administered in conjunction with the achievement battery.

Results

Stepwise multiple regression procedures (SAS Institute, 1982) were used to investigate relationships among academic

achievement (CTBS), self-perceived communication apprehension (PRCF), teacher perception of students' communication apprehensive behaviors (CABI), and intelligence (IQ). Academic achievement served as the criterion variable. A stepwise procedure indicated that the best predictor model consisted of IQ and CABI (R =.611, R =.373, F (2, 201)=59.808, p <.001), with IQ entering the equation first. The results of the stepwise procedure are reported in Table 1.

Insert Table 1 about here

Follow-up analyses consisted of Pearson product-moment correlations (SAS Institute, 1982). A correlation coefficient was computed for each pair of variables under consideration (see Table 2).

Insert Table 2 about here

The following correlations were statistically significant: (a) CTBS and CABI (r=-.262, p <.0001); (b) CTBS and IQ (r=.574, p <.0001; (c) PRCF and CABI (r=.219, p <.001; and CABI and IQ (r=-.154, p <.05).

Discussion

This study explored relationships among student-reported communication apprehension, teacher perception of communication apprehension, intelligence, and academic achievement.

As suggested by previous research in the field, intelligence was found to correlate with achievement; however, the impact of the remaining variables examined in this study had been virtually unexplored. The researchers found the best predictor model to include only two variables, intelligence and teacher perception of communication apprehension, with the latter sharing little variance with achievement. These findings indicate that a predictor model for academic achievement based on both intelligence and teacher perception of CA is only slightly better than one based on intelligence alone.

Results of the investigation of the second research question confirmed, conflicted with, or extended previous research. Confirming or conflicting with previous research are the following findings:

1. Intelligence is substantially and positively correlated with the index of academic achievement examined in this study (e.g., Binder, Jones, & Strowig, 1970; Thorndike & Hagan, 1969).

2. Student-reported CA is not significantly correlated with the index of academic achievement used in this study. This finding conflicts with Comadena (1985) and Elliott (1968), who found significant relationships between CA and academic achievement and whose studies dealt with elementary age children. However, this finding is compatible with the research of Davis and Scott (1978), and Garrison, Seiler, & Boohar (1977), who found no significant relationship between CA and academic achievement among college students.

3. Student-reported CA and teacher perception of CA are significantly correlated, but share little variance. This

finding only tentatively supports previous research that suggests CA can be recognized by teachers (Davey, 1975; Elliott, 1968; Garrison & Garison, 1979a).

4. The finding, student-reported CA and intelligence are not significantly correlated, is supported by Bashore (1971), Davis and Scott (1978), and McCroskey, Daly, and Sorensen (1976).

The final two findings of the study were:

1. The negative correlation of teacher perception of CA with achievement, although significant, is low.

2. Teacher perception of CA and intelligence are negatively correlated at a significant level, but share little variance.

McCroskey and Daly (1976), using descriptions of hypothetical students, found teachers to form negative expectations of the achievement of high communication apprehensive children. The McCroskey and Daly study also suggests teacher perception may be related to achievement; that is, higher achieving students are seen by teachers as having less CA and lower achieving students as having more CA. The present study extended this research by using human subjects and specific CA and achievement scores; further, the variable of intelligence was included. These results must be interpreted with caution since correlations were low: however, the findings do extend the body of research regarding influence of relationships of communication apprehension, teacher perception, and achievement.

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Table 1

Stepwise Multiple Regression Procedure with Academic Achievement (CTBS) as the Criterion Variable

Variable	Multiple *R*	R^2	R^2 change	*p*
IQ	.582	.339	.339	<.001
CABI	.611	.373	.034	<.001

Table 2

Pearson Product-Moment Correlation Coefficient Matrix

Variable	Variable		
	PRCF	CABI	IQ
CTBS	-.022	-.262***	.574***
PRCF		.219**	-.059
CABI			-.154*

*p <.05.
**p <.001.
***p <.0001.